

## **NJ Affordable Green Case Study**

### **Bellevue Court Homes, Trenton, NJ**

The late 19<sup>th</sup> century homes on the 200 block of Bellevue Court form a picturesque streetscape in New Jersey's capital city. In an area where many of the dwellings are vacant or in disrepair, the 22 semi detached units of the Bellevue Court project have newly renovated interiors and facades that have been restored to their original grandeur. Responding to a need for affordable housing and eager to save the architecturally unique homes on Bellevue Court, the city of Trenton committed to bringing back the block. Isles Inc. and Tara Construction Management Corp. were selected as the nonprofit/for profit partnership for the project. The team transformed the once dilapidated shells of homes into attractive, energy efficient showplaces. The homes are three and four bedroom with two and one half baths ranging in size from 1700 to over 2200 square feet.



**254-256 Bellevue Court**

### **Green Features**

Sustainable and recycled materials were incorporated throughout the project. All porches and decks are made from recycled content plastic/wood composite lumber. PET carpet, made from reclaimed plastic soda bottles is used for bedrooms and adjacent hallways. Brick salvaged from demolition was reused as a pervious ground cover. Window frames are made from fiberglass, which is stronger and more durable than window frames typically used for affordable housing. Clapboard siding is made of fiber-cement which is more durable and more thermally stable than typical siding. To promote recycling by the homeowners, there is a recycling area in each kitchen, and recycling storage is provided at the back or side of each home.

During construction on site recycling took place. Approximately 47,000 pound of scrap metal was salvaged and sold to a local recycling company for over \$2,100. To reduce water use drought proof plantings and grasses native to the area are used for ground cover. In keeping with good indoor air quality measures, the paints, wood finishes, caulks and sealants used for interior finishes are low or no VOC. Living rooms and dining rooms have hardwood flooring rather than carpeting, which can harbor dust and other allergens negatively effecting indoor air quality. Track off mats are provided at entries to reduce the amount of particulate matter brought in from the outside. Further information on maintaining good indoor air quality is provided to home buyers in their homeowner manual.



**Dining room hardwood**

### **Energy Efficiency Features**

To keep the houses affordable over time they were renovated to meet NJBPU New Jersey Energy Star Program. Heating and cooling losses are reduced through the building envelope with fiberglass insulation, argon filled low e windows, and careful air sealing of the outside walls. Central heating is provided by 90% efficient condensing gas furnaces. Hot water is produced with energy efficient gas water heaters. The central air conditioning systems are SEER 13 and vary from 2 to 3 tons depending on house size. All ductwork is sealed with mastic and tested for tightness. Kitchens are outfitted with Energy Star dishwashers and refrigerators. As a result of these measures, the Bellevue Court homes are projected to use approximately 30% less energy than a home built to typical New Jersey Standards.

Bellevue Court is served by public transportation and is in close proximity to shopping and downtown Trenton. Mercer Medical Center is nearby and many of the renovated houses were originally inhabited by doctors serving that facility. The development team member Isles Inc. has a long history in the neighborhood and has one of its largest community gardens in Bellevue. Bellevue Court is bordered by the pristine Delaware and Raritan Greenway along the Delaware and Raritan Canal.



### **Delaware and Raritan Greenway**

The homes will be affordable to moderate and low income families. Eleven of the 22 units will sell for \$55,000 to buyers earning less than 50% of the median income, or \$39,740 for a family of four. The remaining 11 units are slated for moderate income families, earning between 50% and 80% of the median income, or from \$39,740 to \$63,583. These units will sell for \$72,000. The mix of incomes in the same cluster of housing was one of the goals of the project. Funding was provided by the city of Trenton, NJDCA Balanced Housing program, NJDCA HOME Grants, the Federal Home Loan Banks of New York and Pittsburgh, and the New Jersey Green Homes Office.

Working on neighborhood outreach with Shiloh Baptist Church Isles Inc. found that before construction was complete over 200 people signed up to purchase the renovated homes. Inspired by the success of the project, the city of Trenton has launched a façade restoration program for all the remaining homes on the 200 block of Bellevue Court.

### Lesson Learned

The energy efficient, sustainable aspect of this project was the first of its kind for many of the team members. In the future, most felt the learning curve could be reduced with preconstruction meetings attended by all the appropriate subcontractors. There was also the desire for closer coordination of on site administration between the developer and architect. Guidance in the field was needed more frequently than it was available. The contractor for the job noted after Bellevue Court he would be "at least 40% more efficient" with the energy and air sealing requirements on his next project of this type. Project Summary Bellevue Court Houses



**Streetscape at Bellevue Court**

### OWNER/DEVELOPER

Isles Incorporation, 10 Wood Street Trenton, NJ 08618, Tara Construction Management 33 Rock Hill Road Bala Cynwyd, PA 19004

### ARCHITECT

Frank Russo, Shapiro Petrauskas Gelber, 1524 Delancey Street Philadelphia, PA 19102

### CONTRACTOR

Omega Corporation P.O. Box 2803, Bala Cynwyd, PA 19004

### GREEN DESIGN CONSULTANTS

Lyle Rawlings, Advanced Solar Products, Inc.  
Andy Shapiro, Vermont Energy Investment Corporation)

### FUNDING

City of Trenton	Donated the 22 units and provided \$1,000,000 Grant
Home Sales	\$1,397,000
NJDCA Balanced Housing	\$577,813 Grant
NJDCA HOME	\$556,500 Grant
NJDCA Green Homes Office	\$165,000 Grant
NJDCA Green Homes Office Microload Funding	\$132,000
Federal Home Loan Bank of New York	\$181,350 Grant
Federal Home Loan Bank of Pittsburg	\$258,650 Grant
Total	\$4,268,313

Please see the accompanying Bellevue Court Microload Homes case study.

### DEVELOPMENT TYPE

Rehabilitation of semidetached houses for home ownership

**RESIDENT PROFILE**

First time home buyer low to moderate income.

**DENSITY**

14 units per acre

**DEVELOPMENT PROFILE**

Type	#/Units	Approx. SF	Cost
3BR	1	1700	\$55,000
3BR	1	1700	\$72,000
4BR	10	1700 - 2200	\$55,000
4BR	10	1700 - 2200	\$72,000

**CONSTRUCTION TYPE**

Rehabilitated two family masonry and frame homes

**DEVELOPMENT COSTS**

Property acquisition costs	66,000
Construction costs	3,467,620
Professional Services	196,000
Developer's Fee, other costs	538,693
Total	\$4,268,313

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<b>Energy Efficient/Green features</b>
<b>Building Envelope</b>
Walls -R-13 fiberglass insulation
Ceiling -R-30 fiberglass insulation
Windows - fiberglass frame, double glazed low e argon filled
Exterior doors - insulated
Air sealing measures - Air tight drywall approach. Non-expanding foam at door and window rough openings.
<b>Mechanical systems</b>
Heating system - 90% efficient condensing gas furnace
Air conditioning - SEER 13 right sized AC
Automatic setback thermostat
<b>Appliances/lighting</b>
Energy Star refrigerator and dishwasher
Indoor Lighting - 1 Energy Star light fixtures per room with compact fluorescent bulbs
Outdoor lighting - High efficiency lighting with motion sensor
<b>Green/recycled materials practices</b>
Recycling area provided in kitchen
Recycling storage area provided at rear or side of house
Jobsite recycling and reuse of materials during construction
Recycling of architectural elements that could not be reused on the project
Reuse of brick from site for pervious paving
Recycled content plastic/wood lumber for porches and decks
PET carpet
ACQ versus CCA pressure treated lumber
<b>Indoor air quality measures</b>
Zero and low VOC paints
Track off mat system at entry
Plywood kitchen cabinets
Low and non toxic wood finishes, caulks and adhesives
Wood flooring in living rooms and dining rooms, ceramic tile in kitchens
Sealed combustion furnace and power-vented water heater
<b>Water Conservation</b>
Drought proof plantings and grasses in species native to the area
<b>Transportation</b>
Bicycle storage In basement with grade level exit or in shed
Public transportation accessible at Calhoun street, perpendicular to Bellevue Court

For more information contact:

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